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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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MMC1/0723

EXAMINER
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RIOS CUEVAS, R

ART UNIT	PAPER NUMBER
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2836

DATE MAILED:

07/23/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

# Office Action Summary

Application No.  
09/449,435

Applicant(s)  
Koeppel et al.

Examiner  
Roberto Rios

Art Unit  
2836



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1) ☒ Responsive to communication(s) filed on Nov 24, 1999

2a) ☐ This action is FINAL.

2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

## Disposition of Claims

4) ☒ Claim(s) 1-23 is/are pending in the application.

4a) Of the above, claim(s) 16, 21, and 22 is/are withdrawn from consideration.

5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.

6) ☒ Claim(s) 1-15, 17-20, and 23 is/are rejected.

7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.

8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirements.

## Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☐ All b) ☐ Some\* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

**FRITZ FLEMING**  
**PRIMARY EXAMINER**  
**GROUP 2100**

## Attachment(s)

15) ☐ Notice of References Cited (PTO-892)

16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 6, 7

18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_

19) ☐ Notice of Informal Patent Application (PTO-152)

20) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-15, 17-20 and 23, drawn to plural supply circuits with emergency or substitute source, classified in class 307, subclass 64.
  - II. Claims 16, 21 and 22, drawn to Data processing control systems, classified in class 700, subclass 292.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions II and I are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because any voltage recovery device can be used with the control system. The subcombination has separate utility such as a voltage recovery device without a memory and a set of executable instructions.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

Art Unit: 2836

5. During a telephone conversation with Frank Occhiuti on 07/19/2001 a provisional election was made without traverse to prosecute the invention of I, claims 1-15, 17-20 and 23. Affirmation of this election must be made by applicant in replying to this Office action. Claims 16, 20 and 21 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

6. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

#### ***Claim Objections***

7. Claim 1 is objected to because of the following informalities: the claim recites a "utility network" and a "utility power network". Applicant is reminded that the claim language must be consistent through all the claims. Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 112***

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 1-15, 17-20 and 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 1, the limitations "sufficient level" and "sufficient duration" render the claim unclear and indefinite failing to clearly set forth the metes and bounds of the claimed invention.

As per claim 3, there is confusion as to whether the recovery device is providing real power only since claim 2 recites the recovery device providing a combination of real and reactive power. Furthermore, the limitation "acceptable utility standards" renders the claim unclear and indefinite failing to clearly set forth the metes and bounds of the claimed invention.

As per claim 4, there is confusion as to whether the recovery device is providing real and reactive power since claim 3 recites the recovery device providing real power only.

As per claim 9, the limitations "sufficient level" and "sufficient duration" render the claim unclear and indefinite failing to clearly set forth the metes and bounds of the claimed invention. Moreover, the claim recites the limitation "the distribution network". There is insufficient antecedent basis for this limitation in the claim.

As per claim 10, it is not clear if "a distribution network" is the same distribution network of claim 9.

As per claim 11, it is not clear if the inverter is coupled between the energy storage unit and the utility power network or the distribution network since claim 9 recites the recovery device being coupled to the distribution network.

As per claim 12, the limitation "acceptable utility standards" renders the claim unclear and indefinite failing to clearly set forth the metes and bounds of the claimed

invention. Furthermore, the claim recites the limitation "the transmission network".

There is insufficient antecedent basis for this limitation in the claim. Additionally, it is not clear how the recovery device provides compensating power to the transmission network since claim 9 recites the recovery device coupled to the distribution network.

As per claim 13, the claim recites the limitation "the transmission line network".

There is insufficient antecedent basis for this limitation in the claim. Moreover, applicant is reminded to use a consistent claim language through all the claims. Additionally, it is not clear how the recovery device provides compensating power to the transmission line network since claim 9 recites the recovery device coupled to the distribution network.

As per claim 23, the limitations "sufficient level" and "sufficient duration" render the claim unclear and indefinite failing to clearly set forth the metes and bounds of the claimed invention. Moreover, the claim recites the limitation "the distribution network".

There is insufficient antecedent basis for this limitation in the claim.

10. The following art rejection will be made as best understood by the Examiner in light of the above 35 USC 112 rejections.

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 1-15, 17-20 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gyugyi (US patent 5,329,222 B1).

As per claim 1, Gyugyi et al (herein after Gyugyi) teach a voltage recovery device connected to a utility power network (Figure 1), the voltage recovery device comprising an energy storage device (31) connected to the utility power network and configured to transfer real and reactive power between the utility power network and the voltage recovery device to recover the voltage on the utility power network (col. 10, line 18) to within a predetermined proportion of the nominal voltage, following a fault condition detected on the utility power network (col. 5, line 41+). Gyugyi does not specifically disclose the utility power network comprising a transmission network connected to a distribution network comprising a transmission line. However, the Examiner takes official notice that a utility power network comprises a power source connected to a transmission line network, which is in turn connected to a distribution line network of a lower voltage.

As per claim 2, Gyugyi discloses that the voltage recovery device can be configured to provide real and reactive power, as needed (col. 5, line 48+). Moreover, the Examiner takes official notice that it is well known in the art to provide a combination of compensating real and reactive power to provide highly effective damping of power oscillations in the system.

As per claim 3, Gyugyi discloses that compensating real power is provided to compensate for voltage faults substantially instantaneously.

As per claim 4, Gyugyi discloses that the voltage recovery device can be configured to provide real and reactive power, as needed (col. 5, line 48+). Moreover, the Examiner takes official notice that a predetermined recovering time range is a

Art Unit: 2836

design choice that depends mostly of the type and capacity of the loads connected to the power network. Furthermore, applicant admitted that maintaining the transmission line network voltage above a minimum level of 0.90 p.u. of the nominal voltage is a well-accepted industry standard.

As per claim 5, Gyugyi teaches the voltage recovery device comprising an inverter (35) coupled between the energy storage unit and the utility power network; and a controller (38) connected to the inverter and configured to control the amount of real and reactive power transferred between the energy storage device unit and the utility power network (col. 5, line 41+).

As per claim 6, Gyugyi teaches that the energy storage device can comprise of a superconducting magnet (col. 5, line 12).

As per claim 7, Gyugyi teaches the voltage recovery device being selected from a group consisting of a SMES, flywheel device or a battery (col. 5, line 12).

As per claim 8, Gyugyi teaches for purposes of illustration the energy storage unit comprising a capacitor and a DC/DC converter acting as an interface between the capacitor and the inverter. However, the Examiner takes official notice that it is well known in the art to provide a magnet interface between an energy storage unit comprising a magnet and the inverter to ensure proper power regulation and bi-directional power flow.

As per claims 9 and 10, Gyugyi teaches a method for stabilizing a utility power network, said method comprising electrically connecting a voltage recovery device having an energy storage unit (31) to the distribution network (Figure 1), detecting a



Art Unit: 2836

fault condition on the utility power network, and operating in response to detecting the fault condition the voltage recovery device to transfer real and reactive power to the utility power network to recover the voltage on the utility power network to within a predetermined proportion of the nominal voltage (col. 5, line 41+). Gyugyi does not specifically disclose the utility power network comprising a transmission network connected to a distribution network comprising a transmission line. However, the Examiner takes official notice that a utility power network comprises a power source connected to a transmission line network, which is in turn connected to a distribution line network of a lower voltage.

As per claim 11, Gyugyi teaches electrically coupling an inverter (35) between the energy storage unit (31) and the utility power network, wherein a controlling unit (38) controls the inverter to control the level of real and reactive power transferred between the energy storage unit and the utility power network (col. 5, line 41+).

As per claim 12, Gyugyi discloses that compensating real power is provided to compensate for voltage faults substantially instantaneously.

As per claim 13, Gyugyi discloses that the voltage recovery device can be configured to provide real and reactive power, as needed (col. 5, line 48+). Moreover, the Examiner takes official notice that a predetermined recovering time range is a design choice that depends mostly of the type and capacity of the loads connected to the power network. Furthermore, applicant admitted that maintaining the transmission line network voltage above a minimum level of 0.90 p.u. of the nominal voltage is a well-accepted industry standard.

Art Unit: 2836

As per claim 14, Gyugyi teaches that the energy storage device can comprise of a superconducting magnet (col. 5, line 12).

As per claims 15, Gyugyi teaches the voltage recovery device being selected from a group consisting of a SMES, flywheel device or a battery (col. 5, line 12).


As per claims 17-20, Gyugyi teaches dynamically controlling the transfer of compensating real power to the utility power network. Moreover, the Examiner takes official notice that it is well known in the art to control the level and amount of compensating real power depending on the type and magnitude of the utility fault and the power capacity.

As per claim 23, the Examiner takes official notice that it is well known in the art to provide multiple recovery devices in a utility power network to increase the system's protection capability and the compensating power capacity.

### **Communication with PTO**

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roberto Rios whose telephone number is (703) 306-5518. In the event that Examiner Rios cannot be reached, his supervisor, Josie Ballato may be contacted at (703) 308-0269. The fax phone number for this group is (703) 305-3432.

Roberto J. Rios  
Patent Examiner

  
**FRITZ FLEMING**  
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